

REMARKS

Claims 1-23 were examined in the application. Claims 2 and 13 have been canceled, and claims 1, 3, 5, 7, 12, 14, 16, 18 and 23 have been amended. Support for the Amendment is found in paragraph [0015] and claims 2 and 13. Applicant hereby requests further examination and reconsideration of the application in view of the following remarks.

Claim Rejections – 35 U.S.C. §§ 102, 103

The Patent Office rejected claims 1, 9-12 and 20-23 under 35 U.S.C. § 102(e) as being anticipated by Schultz et al., U.S. Patent No. 6,445,245 (Schultz). The Patent Office also rejected claims 2-8 and 13-19 under 35 U.S.C. § 103(a) as being unpatentable over Schultz in view of Garlepp et al., U.S. Patent No. 6,133,773 (Garlepp). Claims 2 and 13 are canceled. Applicant respectfully traverses the rejections of the remaining claims for at least the following reasons.

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *W.L. Gore & Assocs. v. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Further, “anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). Moreover, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Ryoka*, 180 U.S.P.Q. 580 (C.C.P.A. 1974). *See also In re Wilson*, 165 U.S.P.Q. 494 (C.C.P.A. 1970).

Claims 1, 12 and 23 have been amended to present the subject matter of claims 2 and 13, obviating the rejection under 35 U.S.C. § 102(e). With respect to the rejection under 35 U.S.C. § 103(a), the Patent Office notes that Schultz fails to disclose that the driver control controls selected ones of the groups of N-channel and P-channel devices on or off for providing one of pull-up type termination, pull-down type termination, and symmetric type termination to the transmission line. The Patent Office relies upon

Garlepp to make up for this defect in Schultz, arguing that "Garlepp discloses variable resistive load allow [sic] to change the impedance (i.e. pullup, pulldown and symmetric type)." Applicant respectfully disagrees.

Claims 1, 12 and 23 now more particularly recite a plurality of N-channel devices *each coupled with a discrete resister for providing a desired output impedance* and a plurality of P-channel devices *each coupled with a discrete resister for providing a desired output impedance*. Thus, the present invention utilizes discrete resistors with the parallel combination of P/N channel devices. In contrast, neither Schultz nor Garlepp, either alone or in combination, disclose teach or suggest the use of discrete resistors with the parallel combination of P/N channel devices as claimed. Instead, Garlepp, which is relied upon for its disclosure of a "variable resistive load" employs a variable resistor implementation ("variable resistive load ..." Column 11, line 39). Fixed resistors may be implemented with high resistivity poly silicon, resulting in smaller silicon area than is possible with equivalent active devices implementation of such resistors. Additionally, a poly silicon implementation of discrete resistors yields a negligible capacitive parasitic which is added to the output node. This capacitance is substantially smaller than would be possible with an active device resistor implementation (channel gate capacitance of a turned-on MOS device). Thus, proper selection of fixed-value serial resistors augments the output resistance of output driver devices to maintain the correct termination, i.e. equal to characteristic impedance of driven transmission line.

Moreover, there is no motivation in the prior art for modifying the teachings of Schultz or Garlepp to provide the PCI-X DDR driver for providing internal termination to a transmission line presently claimed in claims 1, 12 and 23. Accordingly, it is respectfully submitted that 1, 3-12 and 14-23 are patentable over Schultz and Garlepp and the prior art in general. Withdrawal of the rejections under 35 U.S.C. §§ 102,103 is therefore respectfully requested.

CONCLUSION

The application is respectfully submitted to be in condition for allowance of all claims. Accordingly, notification to that effect is earnestly solicited.

Respectfully submitted,
LSI Logic, Inc.,

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By: 

Kevin E. West
Reg. No. 43,983

Kevin E. West
SUITER • WEST PC LLO
14301 FNB Parkway, Suite 220
Omaha, NE 68154
(402) 496-0300 Telephone
(402) 496-0333 Facsimile